

reared on sterile blocks were axenic as no organisms were cultured from them on media (malt extract agar, plate count agar, or AC medium) or observed in squashed larvae.

The ambrosial stage (abundant conidial production) of *C. montia* and *C. clavigera*, like that observed in beetle-infested pine trees, occurred only along larval mines in blocks inoculated with these fungi. This suggests that conditions on the blocks may be similar to those in nature.

Whitney (pers. comm.) reared axenic adult beetles by modifying this technique as follows: the phloem and sapwood were left intact; the blocks were positioned phloem-side up; and one egg was introduced under a flap cut in the phloem. Development took $20.496^{\circ}\text{h}_{10}$. This development time is longer than Powell's (1967) estimate. This likely can be attributed to the lack of fungal associates, but disruption of the wood (e.g. by autoclaving) may have contributed to the extended development time. These adults, when caged on pine bolts, constructed galleries and laid eggs similar to adults from the forest (Whitney, pers. comm.).

These results illustrate the possible usefulness of this technique for investigating beetle–fungal symbiosis and suggest that fungi are beneficial but not absolutely essential for bark beetle development.

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ERRATUM

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The first two lines of p. 1311 should read:

“dual cold-hardiness strategy (dry larvae are generally freeze-intolerant, but wet ones are freeze-tolerant), as previously reported in two other species...”.